CIRCULATION & PARKING

Indiana University

1964

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landscape architects · site planners
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15 October 1964

Mr. Howell H. Brooks, Director
Department of Physical Plant
Indiana University
Bloomington, Indiana

Dear Mr. Brooks:

In accordance with Indiana University's request for a study of campus circulation needs, we are pleased to submit this record of our analysis. It includes recommendations on automobile, bicycle and pedestrian circulation, possible shuttle bus patterns, parking needs and continuing planning efforts.

It has been a privilege working with the University. The many helpful hours that have been so freely given to this effort are greatly appreciated.

Our sincere desire is for this study to clarify the situation, to provide workable solutions to present circulation/parking problems and to establish the comprehensive circulation fabric to which long range land use patterns can most logically adjust.

Respectfully submitted,

JOHNSON, JOHNSON & ROY, INC.

William J. Johnson

Clarence Roy

JJR:lp

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FOREWORD

Indiana University, with an expansion history that compares to or exceeds, that of any similar institution, has experienced the problems and difficulties of inadequate facilities for moving people and cars about and around its campus effectively or to park them efficiently. In December of 1963, the University undertook to have an analysis of the problem prepared and a list of recommendations submitted. This document is the result of that undertaking. Although it is divided for purposes of reading organization into chapters or sections, this study is meaningful only when dealt with as a whole. The analysis is valueless without its interpretation into recommendations; the recommendations rely on the analysis for their essence. It is felt that, if the logic leading to a recommendation is fully clarified and made understandable, a more intelligent reappraisal of the recommendation can be made. Such reappraisals are inevitable and, in fact, critical to the continuing effectiveness of planning for the future.

CONTENTS

ASSUMPTIONS

Undeniably, Indiana University will grow. With similar surety, the community of Bloomington will enlarge its boundaries and its population. The University has doubled its size in the last ten years and conservative estimates indicate another one hundred percent increase in the next ten year period. Bloomington's population has been estimated in the 50- to 70,000 range for 1980.

With this growth will occur an increasingly serious and, if not properly planned for, uncontrollable situation of traffic and parking. Much of this problem will be mutual to the University's and Community's concern and will need be approached in a comprehensive manner, with coordinated efforts. Cooperation involving the Federal Bureau of Roads, State Highway Commission, County agencies, the City and the University, is noteworthy at present and can undoubtedly be expected to continue in the future.

Other considerations relative to internal circulation and parking undertaken in this study are appropriately the University's concern. In instituting a study of this subject, the University has indicated a thorough knowledge of the problems as they exist and a willingness to search out their solutions and implement action. The problems inherent in the circulation system of Indiana University will not reduce themselves, but can be resolved with appropriate planning and forthright action. There is an urgency that must be honored. The problems are sufficiently critical to force immediate action. It is essential that such immediacy take into account long range planning objectives. This study assumes a continuing and constant application of the University to this problem in the future.

Perhaps more than any other single element of an academic complex, the circulation system is in truth, its "structure," that which holds it together and makes its parts organize as an entity. Circulation and parking are vital, essential, functions of a university. As it is important to provide efficiencies in class scheduling and a learning atmosphere in which to study, it is important to accommodate ease of moving about campus efficiently in a relaxed, attractive environment.

INTRODUCTION TO ANALYSIS

The following section deals with an analysis of the various factors which bear upon circulation and parking problems. It is essential that the existing situation is clarified in the way of past patterns of expansion, community automobile circulation, internal campus circulation and parking. A graphic analysis of each is shown with a summation occurring in the "Campus Circulation Alternatives" section.

PAST EXPANSION PATTERNS

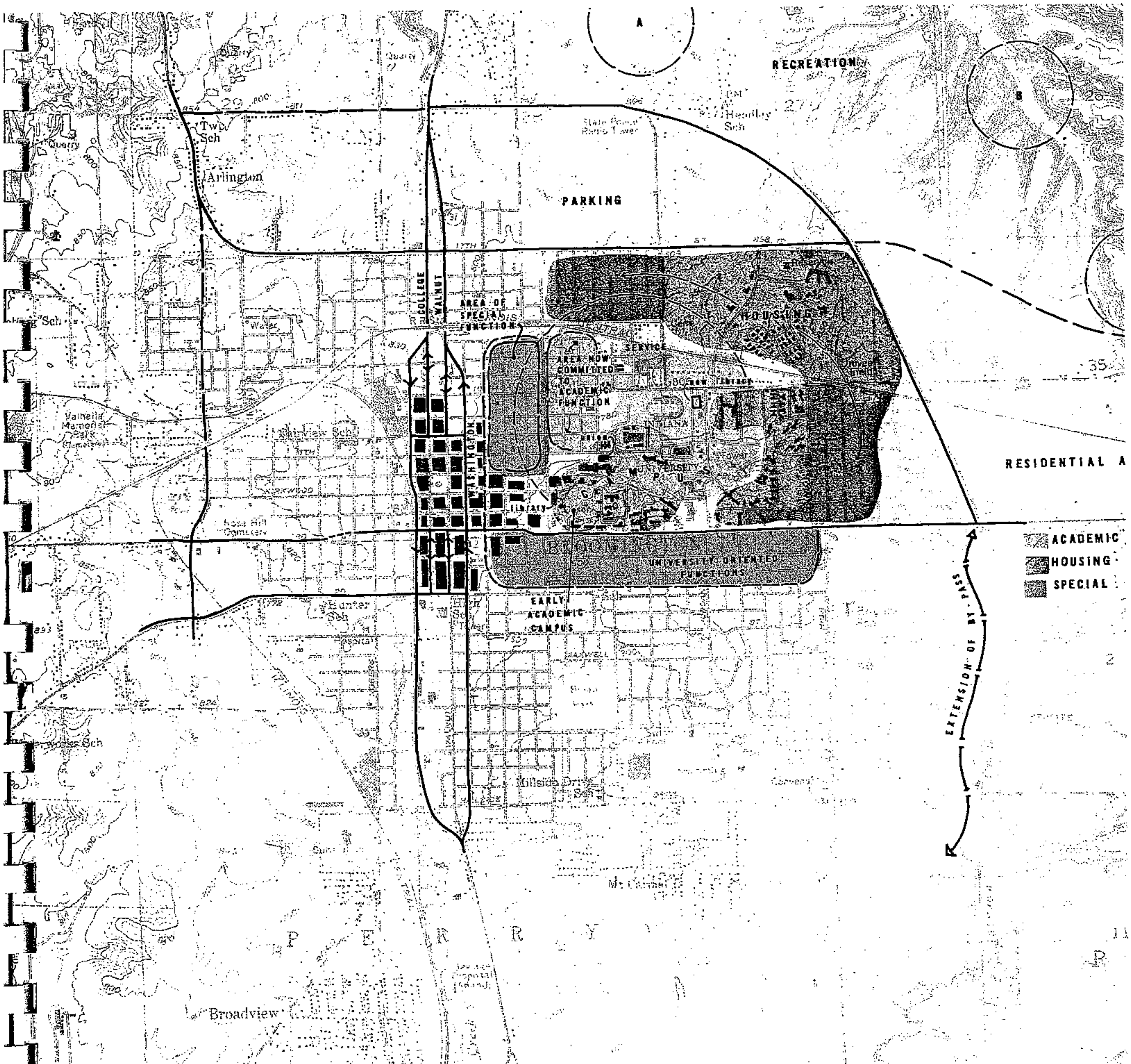
Indiana University's early academic campus centered about a beech forest at the northeast corner of Indiana and Third. The pleasant tree shaded hillside was crisscrossed with footpaths with the buildings eventually forming a large quadrangle-like complex. Expansion occurred to the east due to the open and available land and until 1950 the main campus essentially occupied an area bounded by Indiana on the west, Seventh on the north, Jordan on the east and Third on the south. Private housing as well as fraternities developed south of Third with some campus oriented shops occurring west of Indiana in the direction of Bloomington's business area. (See diagram at the right.)

After 1945, expansion continued to the east along Third but also shifted decidedly northward towards and across the ICC Railroad. This started first as dormitories and temporary housing but was followed by academic functions as well.

Today the academic campus is a single, contiguous zone, with an east-west axis forming the older campus area and a north-south axis rapidly forming along Jordan to the railroad on the north. The "center" of the campus has now shifted from a point near Indiana and Third to approximately the corner of Fee Lane and Tenth.

In view of the University's desire to maintain a contiguous academic campus as expansion continues to occur over the next decade, the most logical zone for academic expansion lies in the northwest, between Dunn, Seventh, Woodlawn and the ICC Railroad. The area is now occupied by older homes and some newer apartments, but it seems adaptable to carefully staged University development

With academic development possibly occurring anew along Indiana Avenue, there is a new dimension of potential for the area from Indiana to Walnut and from Seventh to Fourteenth Avenues. Here it is logical that academic related functions would be located. Private and government research programs, office and conference centers, hotels, shops and apartments could take advantage of a close relationship to the central business district as well as the main academic campus.


RECREATION
PARKING
AREA OF SPECIAL FUNCTION
SERVICE
HOUSING
AREA NOW COMMITTED TO ACADEMIC FUNCTION
COLLEGE
WALNUT
WASHINGTON
UNIVERSITY ORIENTED FUNCTIONS
EARLY ACADEMIC CAMPUS
RESIDENTIAL A
EXTENSION OF BY-PASS
ACADEMIC
HOUSING
SPECIAL
Arlington
Broadview
Library

GENERAL CIRCULATION PATTERNS

As indicated on the adjoining diagram, the basic circulation pattern for the community, aims for a circumferential ring route with major east-west and north-south crosstown avenues allowing for access to and from the central business area. The crosstown avenues must necessarily use existing rights-of-way with occasional realignments at critical points (see Bloomington Master Plan 1964). If these routes could be one-way pairs, a greater measure of efficiency and safety could result as well as reducing the apparent effect of increased traffic volume.

The first portion of a circumferential ring route is the recently constructed bypass north and east of the campus. Crosstown routes needed by the community and affecting local campus circulation are:

A. North-South
   - Indiana
   - Jordan
   - Bryan and High

B. East-West
   - Seventeenth
   - Tenth
   - Third

Of these routes, Indiana and Third could be made one-way pairs by coupling Dunn with Indiana and Atwater with Third. Third Street poses the greatest challenge for solving future traffic volumes because of its orientation to the central business area. Eventually relief can be seen in Second plus Atwater pairing up with Third from the downtown area to a point east of the existing bypass.

The potential for relieving campus traffic congestion would be greatly enhanced if Seventeenth were extended east of the bypass to a point connecting with Route 45, giving excellent access to the University High School on the way. This extension would allow northeastern suburbs the choice of bypassing the campus on Seventeenth rather than going through the campus on Tenth.

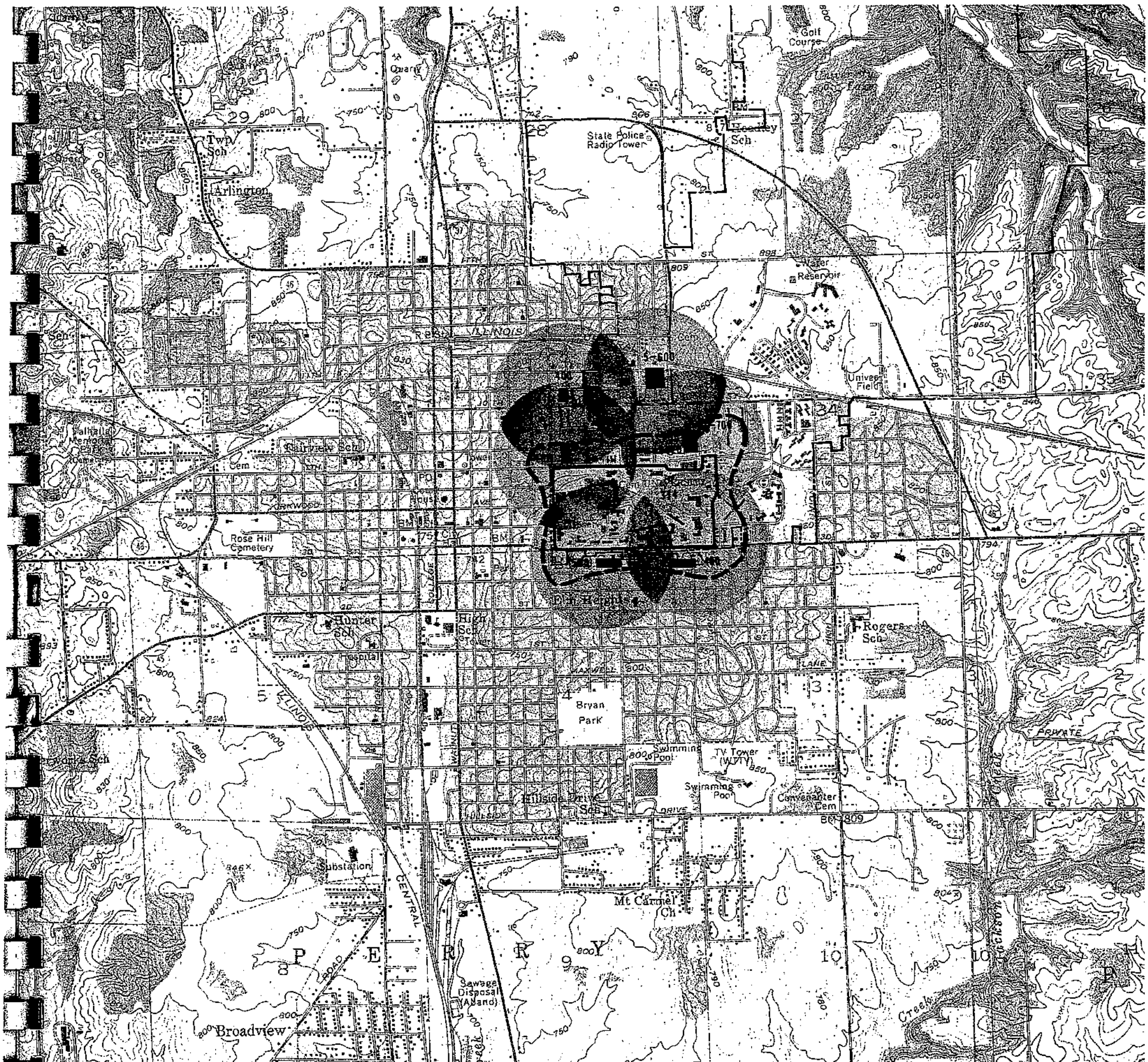
PARKING

Parking is provided on campus today in a complex, spotty arrangement of open lots categorized as to use for faculty, students, visitor and open parking. The arrangement is, in large measure, due to the timing of the problem. Indiana University's parking needs were small in 1937 when many of the land use assignments were committed. The allowance for parking of vehicles was therefore limited. The tremendous expansion in enrollment multiplied by the great increase in the ownership of cars per family in this country has caused the problem's significance to grow and compound to excessive proportion more rapidly than corrective measures were able to meet it or to keep pace with it.

Some idea of the magnitude and seriousness of the problem is evidenced by figures surveyed by the Faculty Parking Committee and made clear in their report to the University in 1962. Although a total of 5213 parking spaces are provided on campus for 5592 registered student cars and 3008 faculty-staff permits, further analysis shows that only 1426 parking spaces are at all useful in conducting the daily affairs of faculty and staff. Further, only 314 spaces of these are available in the central academic area of 3008 faculty, staff and disabled students, where the ability to come and go is a necessity for efficient functioning. Thus, the significant ratio of cars to spaces is 7:1 for combined use near campus. Visitor parking has a similar aspect of not always being available where it is needed.

The resulting picture is, of course, all available spaces are taken early in the morning with untold confusion and delay caused to others, a large number of cars undesirably parked on community residential streets, and complicated traffic patterns caused by unclear and totally inadequate parking facilities.

Relief and solution require a doubling of present facilities just to catch up with the present problem and sound planning and programming to meet future needs. Parking structures located at six critical points about the periphery of the academic zone can provide sufficient parking within a functional distance of all points and can be efficiently related to the traffic pattern into a clearly discernible and functional system adequate for 1968-69 demands. Another 2 to 4 structures will need to be programmed to meet 1973-74.



Golf Course
Quarry
State Police Radio Tower
Twp Sch
Arlington
Water Reservoir
Univer Field
Fairview Sch
Cem
Rose Hill Cemetery
Hunter Sch
High Sch
Hospital
Rogers Sch
Bryan Park
Swimming Pool
TV Tower (WTTV)
Hillside Drive Sch
Convenanter Cem
Substation
Mt Carmel Ch
Sewage Disposal
Creosote
Broadview
P E R R Y

Existing circulation within the interior of the campus, and aside from the major traffic ways discussed elsewhere, includes a network of service access drives and a linkage of walks and pathways. Bicycles are allowed and, in fact, encouraged, but no discernible system of circulation is presently provided for their use.

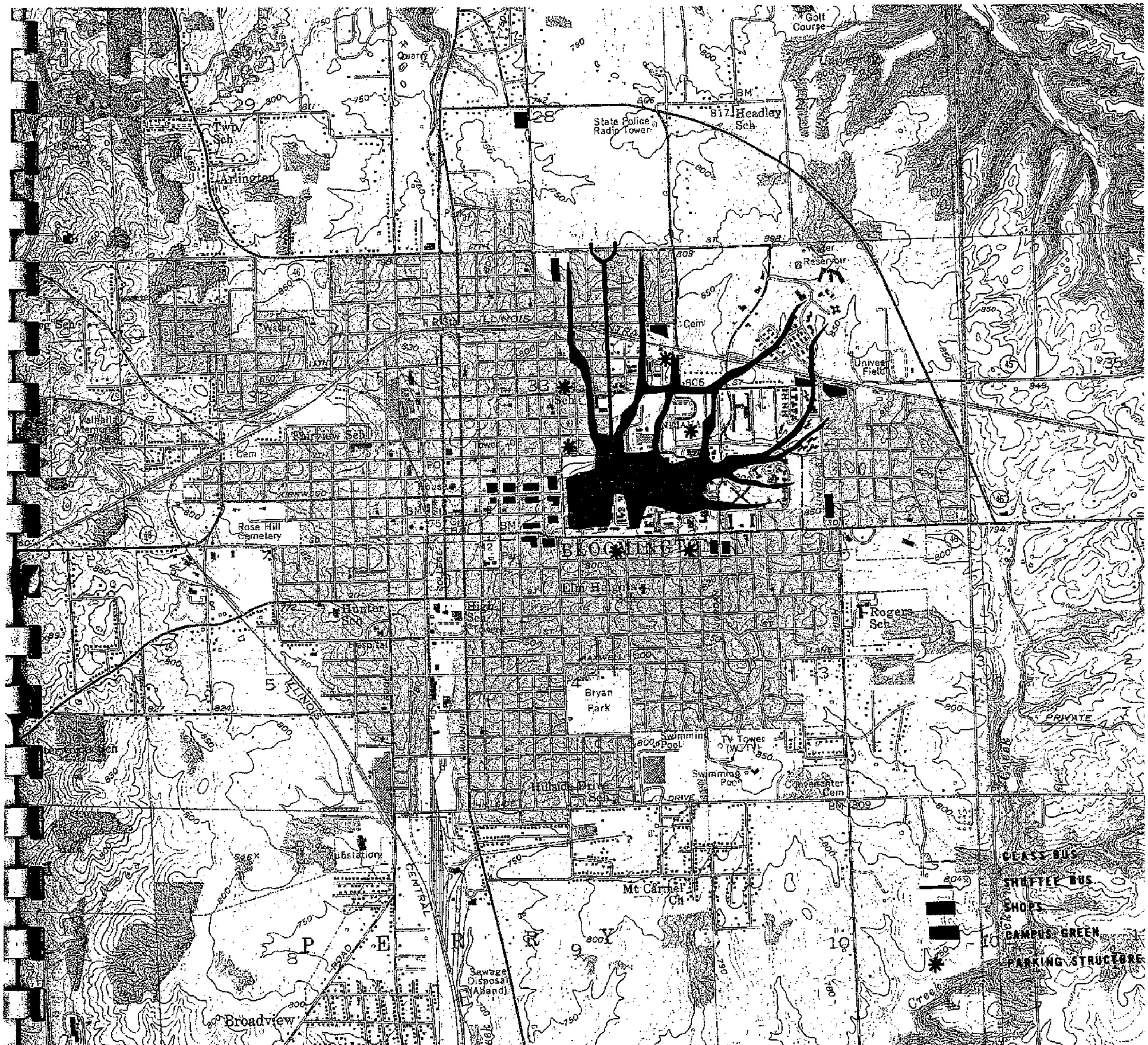
The linkage of walks and pathways, however, does have form and meaning which directly relates to its function. Essentially, it is a radial pattern with its center in the academic core and its radials extending out to the dormitory areas. To a significant degree, this pattern overlays and coincides with the open space pattern of the old beech woods and the valley floor of the Jordan River. It loses its clarity and its environmental qualities at the railroad separating the housing area from the academic campus. It seems appropriate and logical to concentrate major improvements to the pedestrian circulation system at the railroad crossings, to open them up, let the wooded character spill through from campus to housing and inspire extensions and additional arms to the system.

Of particular concern is the future academic area to the north and west of old central campus where the opportunities to construct a major addition to the campus walk pattern are unique and timely. Open space is available and if assigned this function early and planned sensitively to carry through the spirit of the campus valley and wooded areas, a campus unity and integrity can be achieved.

Providing the way not only for foot traffic, this system can be designed to accommodate efficiently and safely bicycle movements as well. Protected from automobile traffic and detailed to provide safety in turn to the pedestrian, a combined pedestrian/bicycle/open space pattern can enhance the traffic solution as well as the environmental character of the campus.

The ability to park cars in storage in large volume at the new stadium area beyond the range of convenience to the central campus suggests the feasibility of a shuttle bus or device of some description to bring this feature within reach, time-wise, of the academic core. Its route must be direct, its system clear and its schedule frequent.

Access to service points on campus should be efficient but may, where appropriate, be combined with the walkways in location and character.


Golf Course
Quarry
Twp Sch
Arlington
State Police Radio Tower
Headley Sch
Water Reservoir
Cem
Fairview Sch
Rose Hill Cemetery
BLOOMINGTON
Elm Heights Sch
Hunter Sch
High Sch
Rogers Sch
Bryan Park
TV Tower (WTTV)
Swimming Pool
Covenanter Cem
Hillside Drive Sch
Substation
CENTRAL
Mt Carmel Ch
P E R R Y
Sewage Disposal (Aband)
Broadview
Creosote
ILLINOIS
CLASS BUS
SHUTTLE BUS
SHOPS
CAMPUS GREEN
PARKING STRUCTURE

From the first complex of buildings at the corner of Indiana and Third, Indiana's campus extended essentially to the east between Third Street and Seventh. The business district bordering the western edge of the campus and the residential neighborhood south of Third have kept pace with the University's steady extension of the east. The greatest degree of campus development flexibility lies to the north and west. The last decade has seen much extension of permanent buildings to the north as far as Seventeenth Street, between Fee Lane and Union.

It is apparent that improved circulation is essential around the major university campus area. The bypass on the north and the east is part of the pattern. The west and south edges of the campus, however, are marked by the grid system pattern of streets of old and established community patterns; here the alternatives are few. The existing streets must be used and one-way traffic as well as more careful parking controls can add to the capacity of these streets for carrying today's traffic volume.

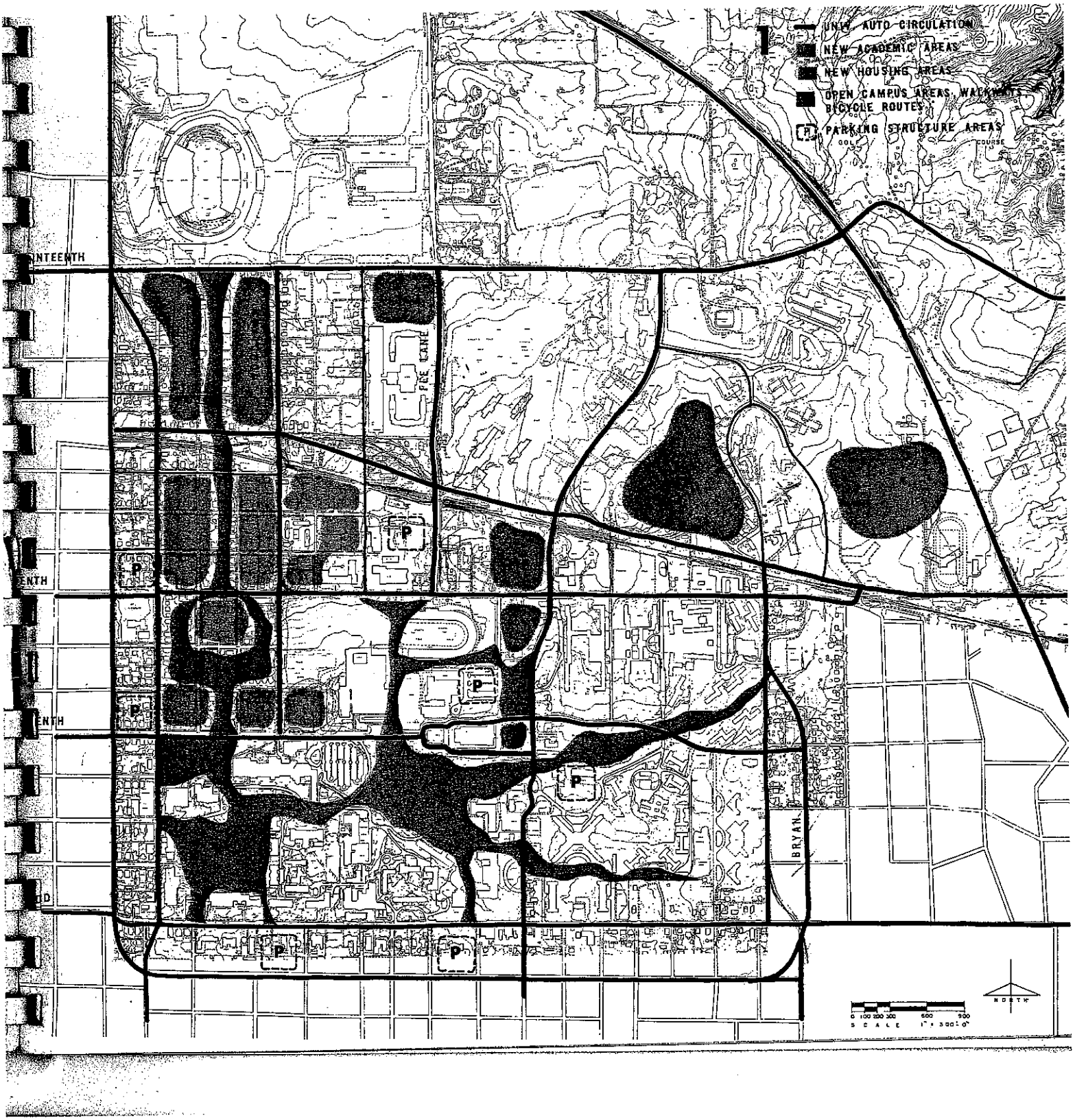
The circulation alternatives then seem to focus upon an east-west, mid-zone portion of the campus with the principal traffic circulation issue being how might east-west cross-town community traffic best move through the middle of Indiana's campus. The demand for this is presently accommodated on Tenth and Seventeenth, with the Illinois Central Railroad right-of-way suggesting a third possible east-west routing in this area. The distance between Tenth and Seventeenth is one-half mile. It is doubtful that all three possible routes, Tenth, Seventeenth and the possible route along the railroad, need be major east-west arteries of major magnitude. The land areas between the railroad and Seventeenth allow for good development potential. All university projects in this area could adjust very well to Seventeenth as being a major east-west routing in the community. Tenth, however, is a major east-west artery which divides not only major portions of academic uses, but also divides the only remaining land area adaptable to continued academic expansion. Therefore, it appears essential that Tenth should be de-emphasized as a major east-west traffic artery and be converted to a local campus drive in accordance to desirable academic campus extension.

There are several alternatives in dealing with this critical mid-section of the campus. The following is a description of two considerations that were searched out as well as a description of the concluding concept:

The first alternative shows Tenth Street as it exists today, coupled with a new avenue constructed just north of the Illinois Central Railroad. The assumption states that these two avenues could carry crosstown community traffic, as well as local campus traffic, entering and leaving the campus area itself.

The advantage, of course, is to retain Tenth Street as an old and established crosstown route, familiar to many as a relief for Third Street running parallel to the south. The new routing would add capacity in volume flow as well as the possibility of making Tenth Street one way east, and the newly constructed avenue one-way west. Such a one-way pair would allow for safe street crossing for the large number of students who would cross both avenues.

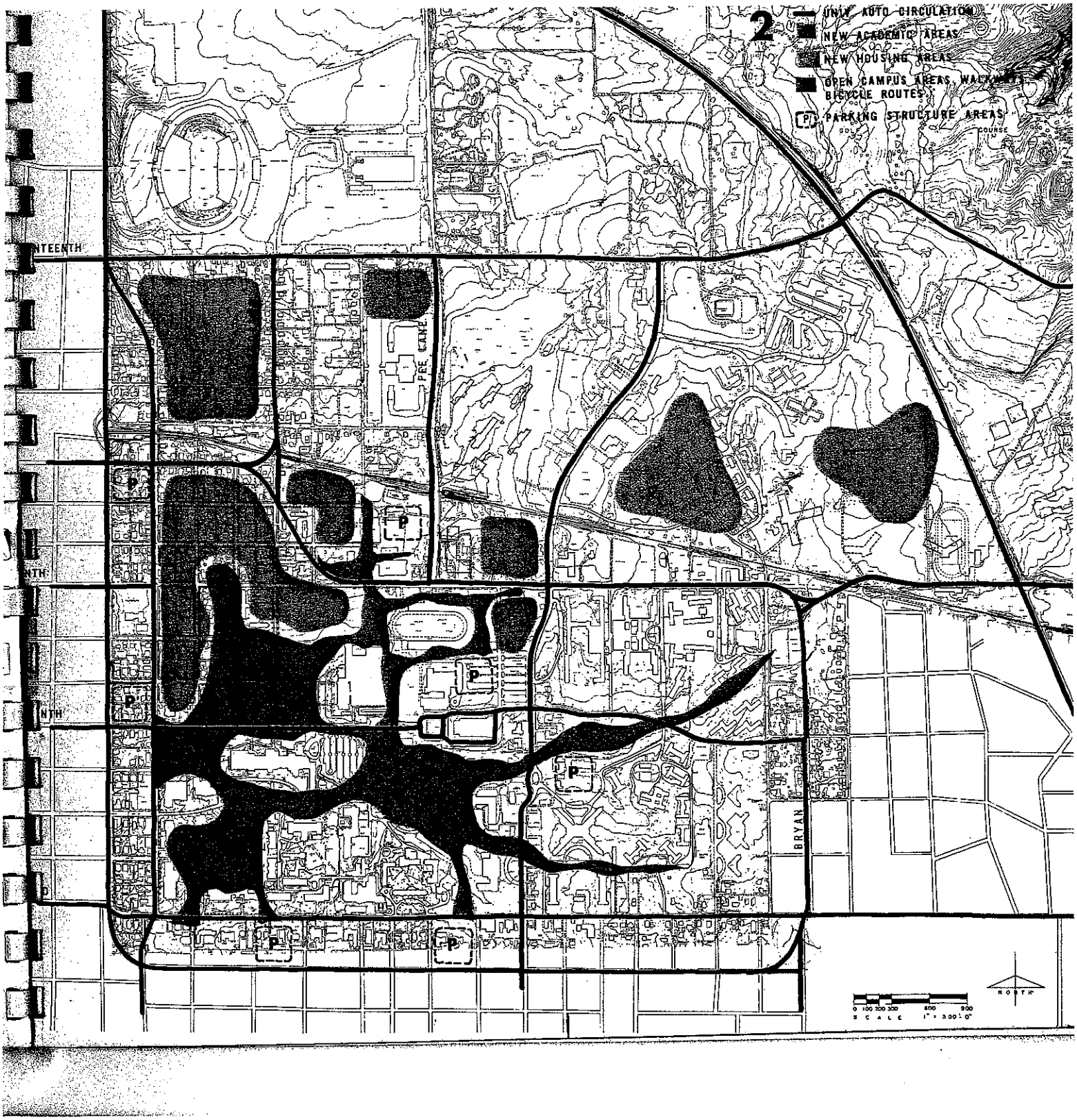
The disadvantage is apparent, Tenth Street bisects new university academic expansion. It is conceivable that the extension of Seventeenth Street, east of the bypass as indicated, would distribute the east-west flow of future community traffic enough to allow manageable traffic volume on Tenth Street.


UNIV. AUTO CIRCULATION
NEW ACADEMIC AREAS
NEW HOUSING AREAS
OPEN CAMPUS AREAS, WALKWAYS
BICYCLE ROUTES
PARKING STRUCTURE AREAS
GOLF COURSE
FREE WAY
BRYAN
NORTH
SCALE

The second alternative shows Seventeenth Street extended to the east to serve the University High School and meet with State Route 35. The assumption is that Tenth Street would still serve its role as a general crosstown route, but more in keeping with the University campus expansion needs.

Indicated in this plan there is the major portion of academic expansion extending to the north within a realigned Tenth Street which swings north to meet with Twelfth Street. In this way future academic expansion for the next decade could be assured a large contiguous expansion of its campus.

The advantage of this proposal would be in allowing cross-community traffic to move through the campus but with a good deal more local control. The disadvantage is that Tenth Street would be a more indirect crosstown route than it now is, due to the northward realignment of Tenth Avenue to Twelfth Street.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UNIV. AUTO CIRCULATION
NEW ACADEMIC AREAS
NEW HOUSING AREAS
OPEN CAMPUS AREAS, WALKWAYS, BICYCLE ROUTES
P PARKING STRUCTURE AREAS
NTEENTH
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BRYAN
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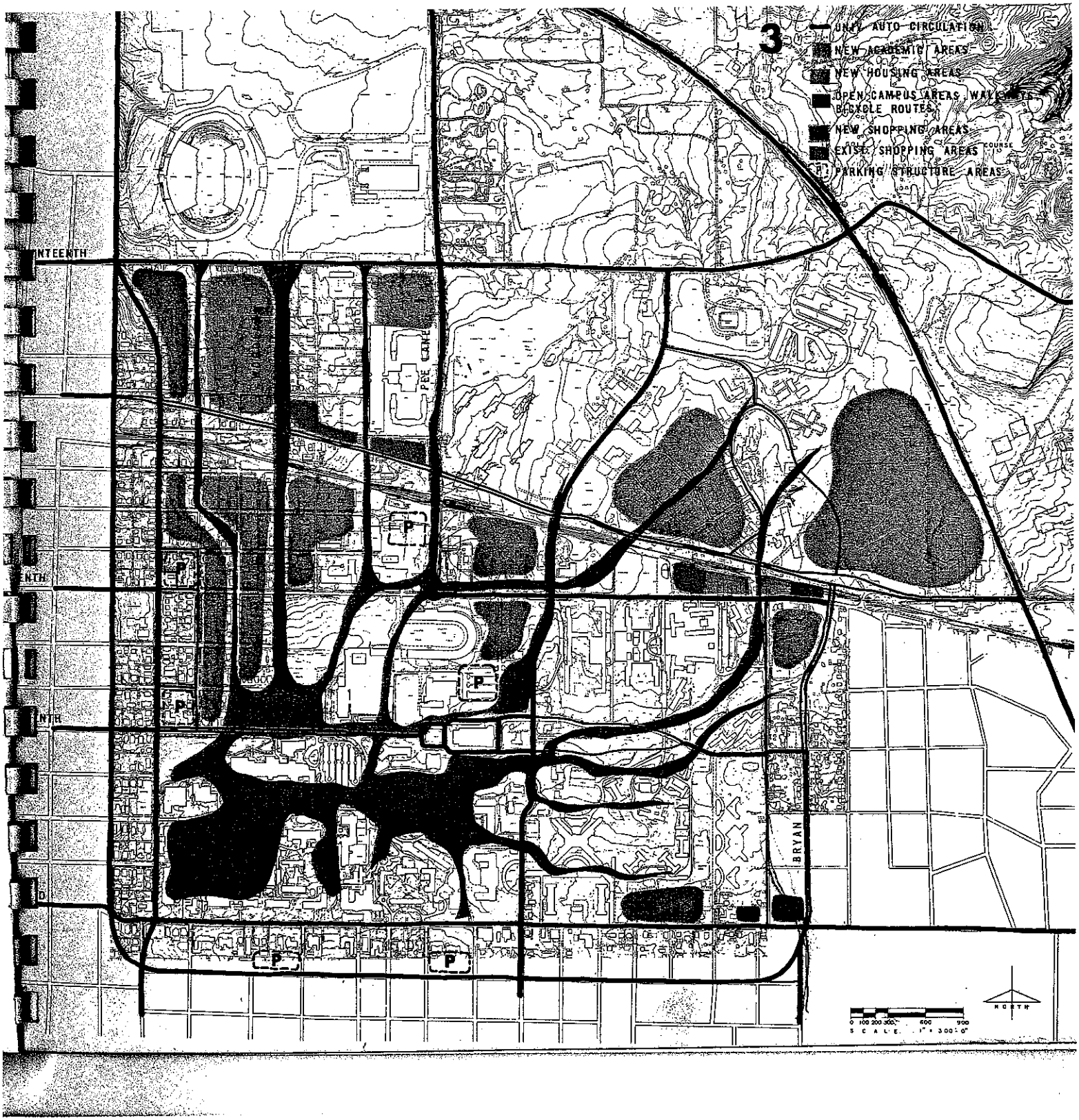
NORTH
SCALE 1" = 300'-0"

The concluding concept is a logical development of the second alternative. The assumption is Seventeenth Street be extended east of the by-pass to serve the University High School and the residential areas further to the east. A new parkway be constructed following the north right-of-way of the Illinois Central Railroad, continuing through to connect with Fourteenth Street. This new route would intersect at a reconstruction railroad underpass and the extension of Bryan Street Parkway. Tenth Street is indicated moving from Bryan Street Parkway extended to Fee Lane and terminating at that point. Here Fee Lane and Tenth Street would merge into a continuous route, forming a major campus entry. A ceremonial campus parkway would be constructed running north and south along Woodlawn Avenue, connecting the athletic area with the center part of campus.

The disadvantage to this proposal is that Tenth Street would be a removed east-west cross town facility. The replacement, even through conceived as a wider, more efficient routing, would be more indirect than Tenth Street as it now exists.

The advantages, however, are many. The proposal allows all academic expansion for the next decade to fall within a completely controllable area from the standpoint of automobile traffic, bringing about safer and more efficient pedestrian and bicycle movement. It allows for more efficient and controllable building densities and layout. It encourages and provides walking on campus, there-by alleviating the traffic volume problems on the campus edges. It allows Tenth Street to be replaced by a more efficient, attractive, and safer route.


3
UNIV. AUTO CIRCULATION
NEW ACADEMIC AREAS
NEW HOUSING AREAS
OPEN CAMPUS AREAS WALKS & BICYCLE ROUTES
NEW SHOPPING AREAS
EXIST. SHOPPING AREAS
PARKING STRUCTURE AREAS
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SCALE 1" = 300'-0"

INTRODUCTION TO RECOMMENDATIONS:

The recommendations which follow are organized under six basic categories:

A. General Traffic Circulation
B. Street Closings
C. Multi-Level Parking Structures
D. Campus Character
E. Major Bicycle Routes and Pedestrian Walkways
F. Shuttle Bus

A map adjoins each category to facilitiate the proper orientation of each item to the campus layout.

A. General Traffic Circulation
The recommendations listed are aimed at improving the basic ring circulation system as well as allowing community traffic to move through the campus area with the least possible disturbance to pedestrian and bicycle movement between various university functions.

B. Street Closings
Certain streets are identified as becoming internal minor traffic carriers and are here identified as street closings in order to increase the potential efficiency of future campus development projects.

C. Multi-Level Parking Structures
The locations indicated are most adaptable to serving the academic campus within a five minute walking distance as well as being close to the campus automobile circulation ring. The size of the structure and functional arrangement is subject to the actual site restrictions.

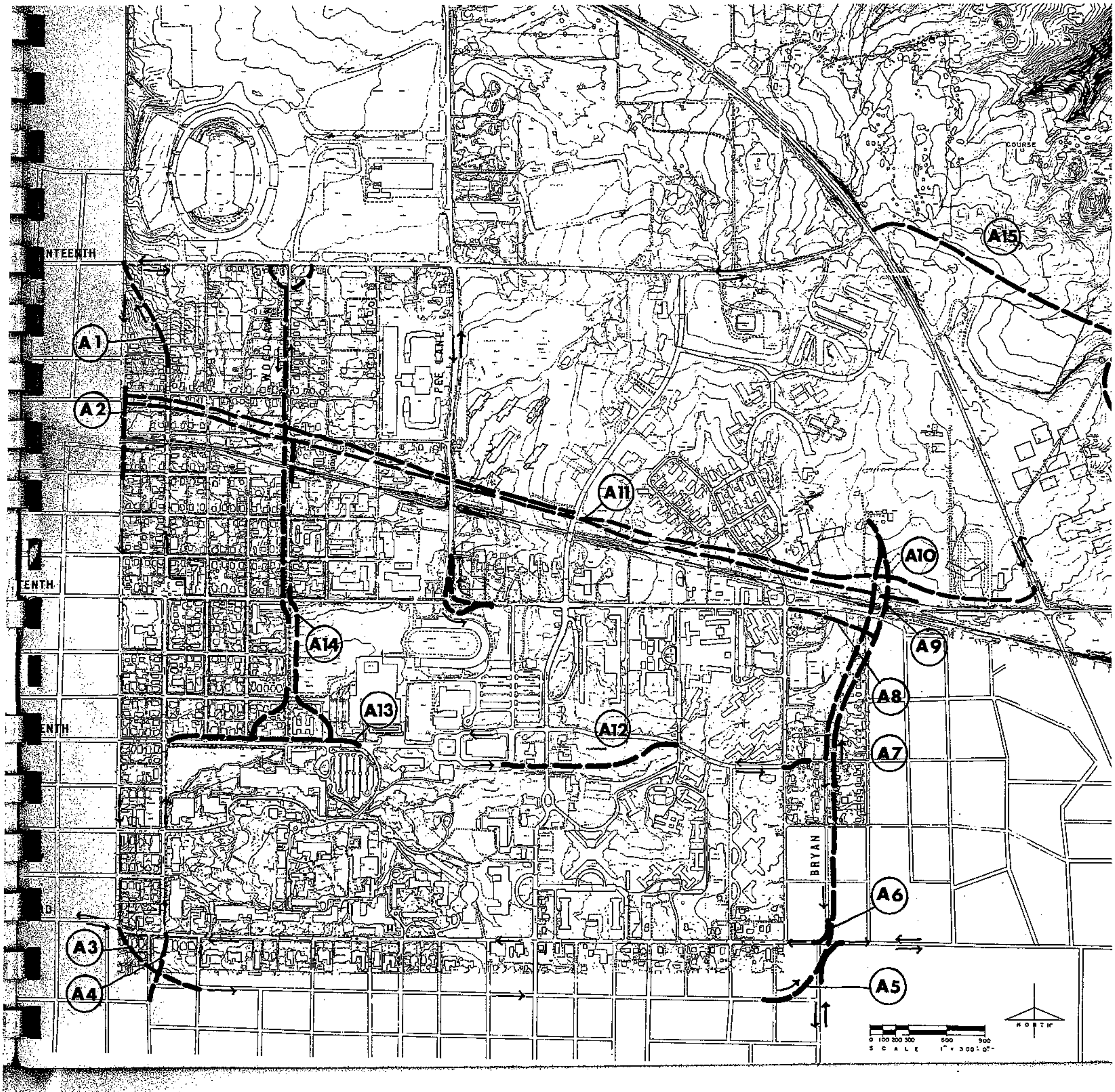
D. Campus Character
Outlined here is the campus areas which can most appropriately be developed in the tradition of the parklike campus spirit as contrasted to high-density urban type development of building project areas.

E. Major Bicycle Route and Pedestrian Walkways
The routings are identified as they begin on the extremities of the campus and move from dense housing areas to the campus core area. These routes do not constitute all necessary bicycle and pedestrian routes, but they are the ones most adaptable to serve major academic and housing concentrations as well as having the most promise to be developed in the traditional campus spirit of shade tree groves and winding walkways.

F. Shuttle Bus
Outlined here are the major routes that can be most effective to move students from one area to another. It is the intent that the simplicity of operation will be its major asset to the student body and the university.

A. General Traffic Circulation

1. Indiana Street to become one-way northbound and to be extended to the north, blending with Dunn Street.
2. Dunn Street to become one-way southbound from Seventeenth southward and extended across the Illinois Central Railroad right-of-way either at grade or as an underpass, similar to the Indiana underpass.
3. Dunn Street to be extended as one-way southbound smoothly into Atwater to become one-way eastbound. Traffic control signal should occur at the corner of Third and Indiana.
4. Henderson to be extended one-way northward from Atwater to meet Indiana at Third. Traffic control signal to remain at this intersection.
5. Atwater to be extended one-way north to blend with High and to merge smoothly with Third Street. High Street to be two-way traffic flow south of Third Street and to be widened from two to four lanes.
6. High Street to blend with Bryan Street at the intersection of Third. This intersection to be furnished with traffic control signals, as well as channelization controls.
7. Bryan Street to become two-way boulevard, extended beyond Seventh to meet Tenth at the Illinois Central underpass.
8. Tenth Street to be relocated east of Union to meet with extended Bryan, approximately 200 feet south of the Illinois Central Railroad right-of-way.
9. The Illinois Central underpass at the present Tenth Street to be broadened for the accommodation of the extended Bryan boulevard as well as pedestrian paths and bicycle routes.
10. The right-of-way of Tenth between the railroad underpass and the bypass to be extended northward approximately 200 feet to allow for appropriate channelization and traffic signal controls.
11. A new east-west route between the extended Bryan on the east and to meet with Dunn on the west on Fourteenth Street. Portions of this route should be broadened and divided at Woodlawn and other appropriate points to allow for adequate turning movements to the north and to the south.
12. Seventh to be extended one-way eastward from the auditorium to merge with a two-way Seventh at approximately the intersection of Sunrise Street. The present Seventh Street between Sunrise and the auditorium is to become one-way westerly. Traffic signals are to be placed at both intersections of Seventh and Jordan.
13. Seventh to become a main boulevard from the auditorium west with the minimum of 20 feet for the median strip in order to allow for adequate turning movements in to the Union area. The median is to contain the trees on the north side of Seventh.
14. Woodlawn to become a boulevard between Seventh on the south and Seventeenth on the north. Between Eighth and Tenth, the widening is to occur on the east side of the street with the center parkway a dimension of 20 feet or more. The parkway is to contain the trees presently growing on the east side of Woodlawn. At Tenth, the boulevard extension is to occur on the west between Tenth and Seventeenth. Woodlawn, between Twelfth and Thirteenth, is to be connected across the Illinois Central Railroad by an on-grade crossing or an underpass.
15. Seventeenth to be extended east of the bypass to meet with State Route 45 as it turns to the northeast. This extension to also serve as a northern approach to the University school.



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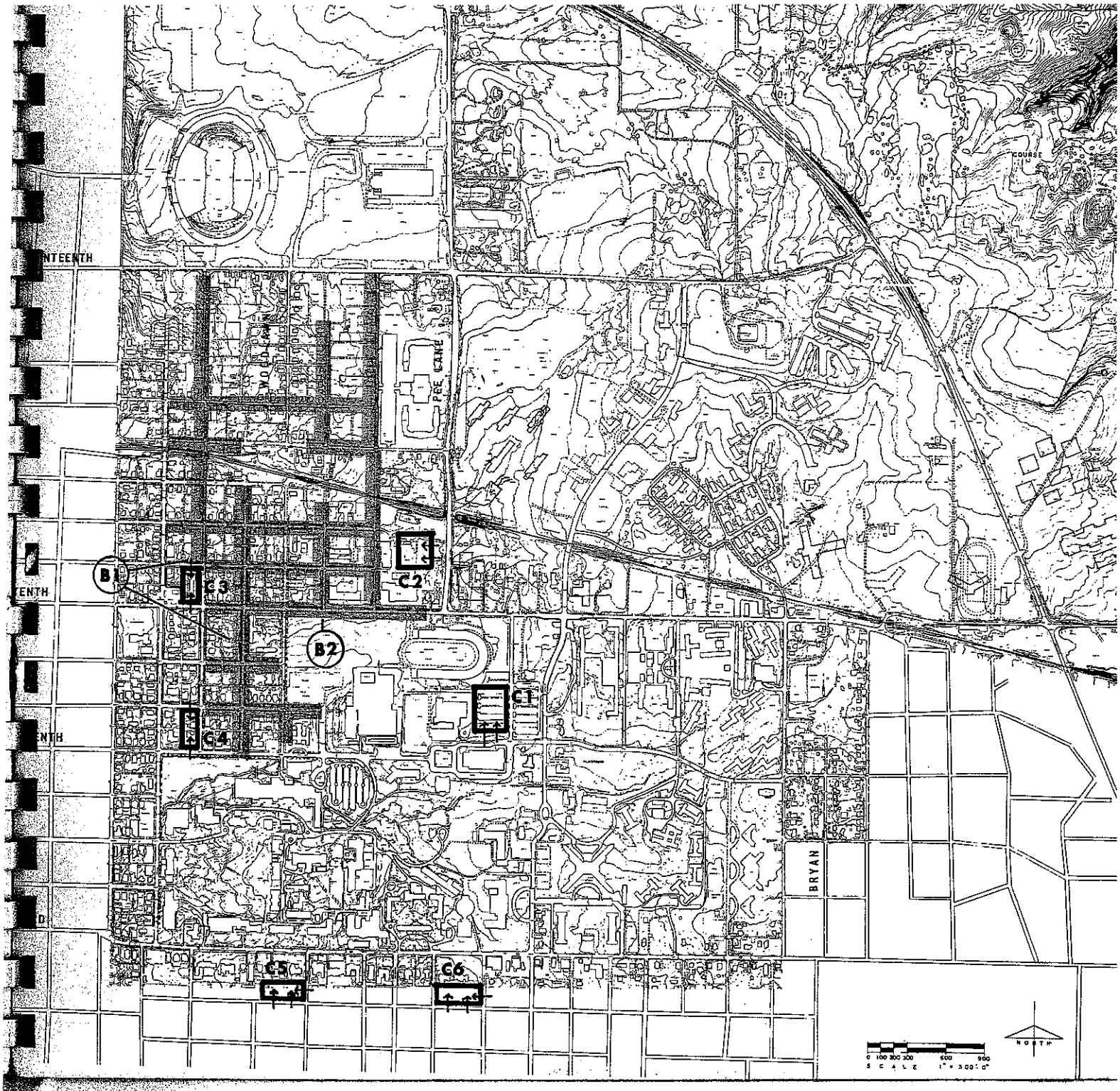
BRYAN
GOLF
COURSE
0 100 200 300 600 900
SCALE 1" = 300'-0"
NORTH

B. Street Closings

1. In general the area bounded by Indiana on the west, Seventeenth on the north, Fee Lane on the east and Seventh Street on the south is to be considered as devoid of any through traffic movements. The notable exceptions are: Woodlawn, running north and south; Twelfth Street, running east and west: and Fess Street between Cottage Grove and Seventh. It is assumed that this area will continue to have east-west and north-south automobile service routes, but they are to occur only in accordance with the building development patterns as they emerge.
2. Tenth Street as a vacated right-of-way to become an important portion of a major east-west pedestrian and bicycle avenue.

C. Multi-level Parking Structures

1. The location of a parking structure in the amount of 600-700 cars on a site immediately west of the fine arts building just north of Seventh. The structure is to be approached from Seventh Street.
2. The location of a parking structure in the amount of 500-600 spaces in the area immediately south of the power plant and immediately east of the plant service building. This structure is to be approached from Fee Lane.
3. The location of a parking structure for approximately 400 cars in the east half of the block bounded by Tenth, Indiana, Cottage Grove and Fess. This structure is to be approached from either Cottage Grove and Tenth or from Fess.
4. The location of a parking structure for approximately 400 cars on the east half of the block bounded by Seventh, Indiana, Eighth and Fess. The structure is to be approached from Seventh and Eighth or from Fess.
5. The location of a parking structure for approximately 500 cars at the northwest corner at Atwater and Woodlawn. The structure is to be approached from Atwater and Woodlawn.
6. The location of a parking structure for approximately 400 cars at the northwest corner of Atwater and Highland. This structure is to be approached from Atwater and Highland.


B1
B2
C1
C2
C3
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PEE DEE
BRYAN
COURSE
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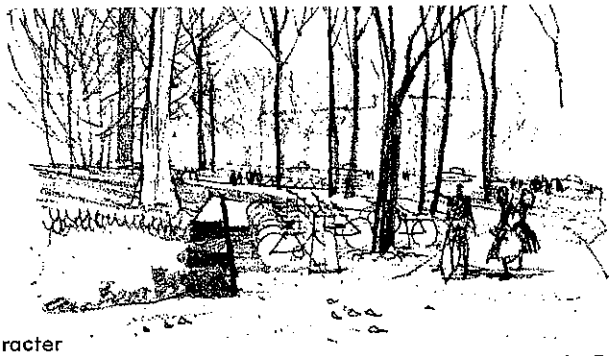
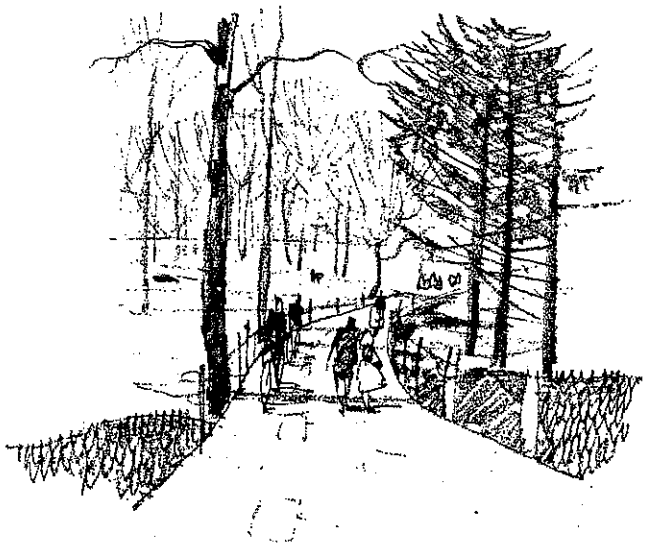
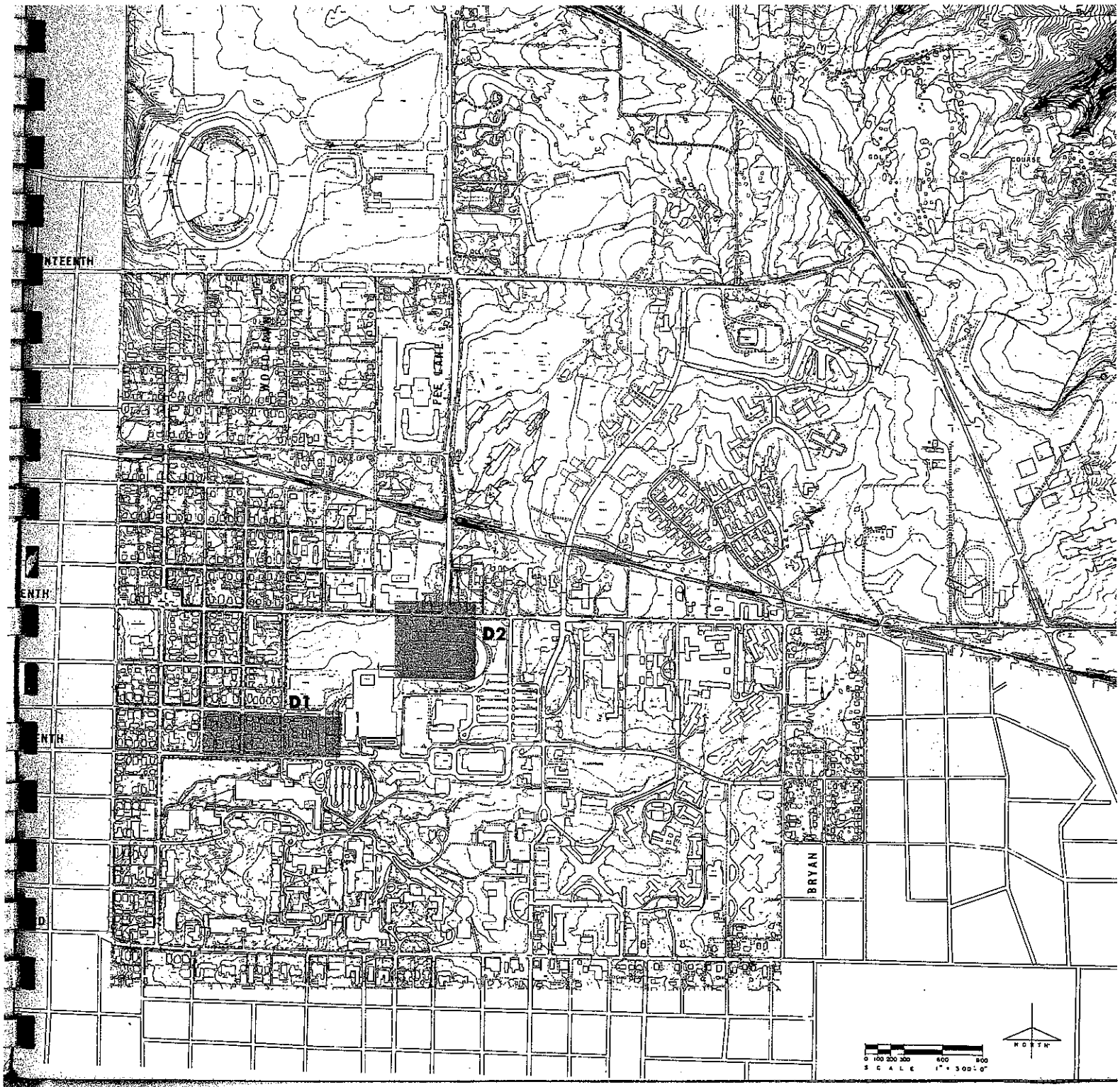


D. Campus Character

1. This zone of the future campus (bounded by Seventh on the south, Fess on the west, Eighth on the north and the gymnasium on the east) to be developed as campus open space in the tradition and character of the existing campus areas along the Jordan River valley. Because of the need for a great deal of building density in this proposed academic area, campus open space is limited, carefully located and carefully developed. Campus open space in the remainder of the proposed academic area to the north is to consist of relatively narrow, parklike corridors winding throughout high density academic building structures.



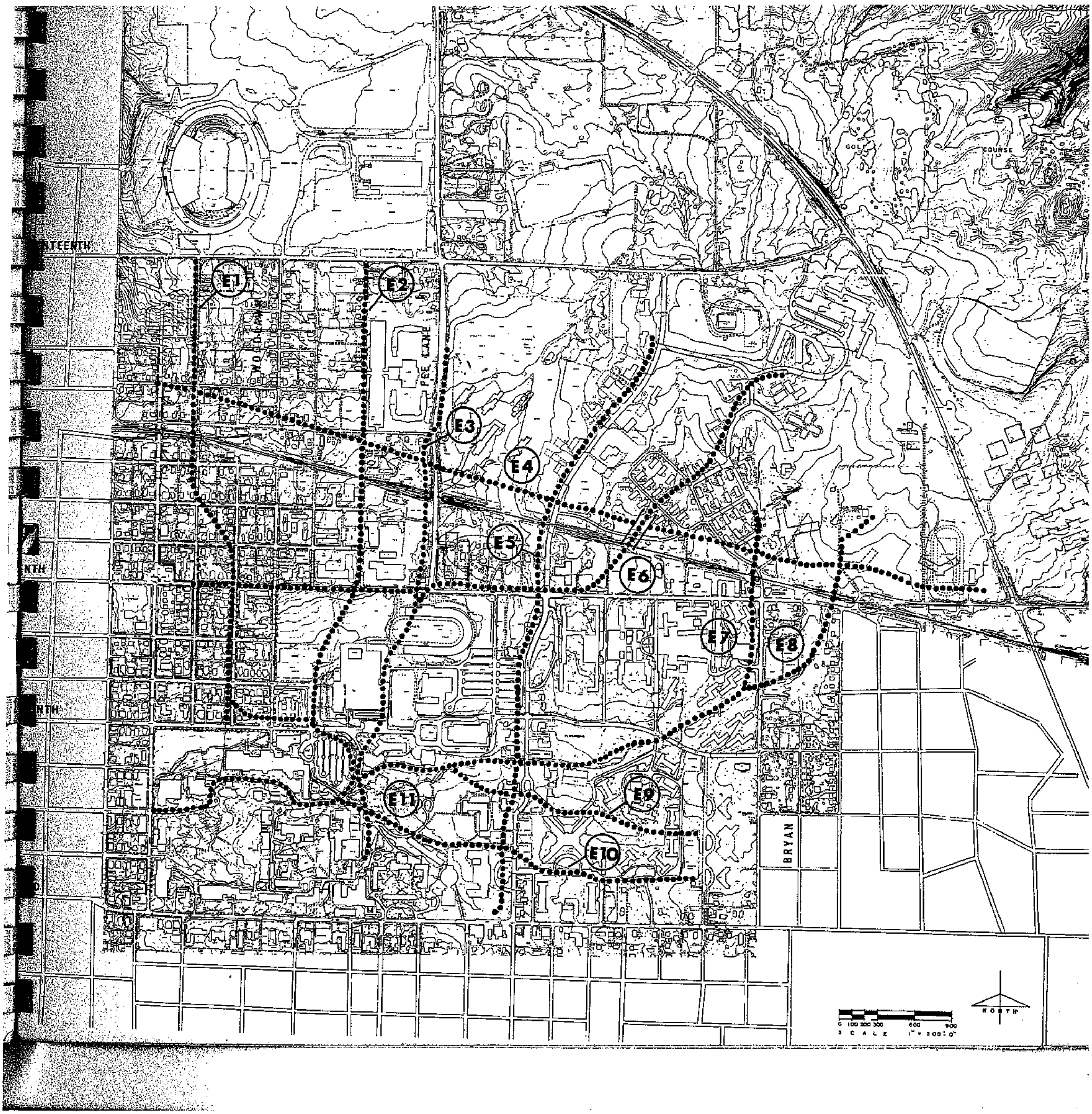
2. The point where Tenth Avenue turns northward on Fee Lane represents an area of strategic location in regards to campus image. Here the original football stadium is to be shortened to allow for a direct bicycle and pedestrian route from Tenth to Ballantine Hall. The remaining horseshoe of the stadium is to be developed as an open-air ampitheatre or replaced by a similar new development in accord with the need to protect open campus space in this area.


D2
D1
BRYAN
NORTH

E. Major Bicycle Routes and Pedestrian Walkways

These routings are identified as they begin on the extremities of the campus and move from dense housing areas to the campus core area. These routes do not constitute all necessary bicycle and pedestrian routes, but they are the ones most adaptable to serve major academic and housing concentrations as well as having the most promise to be developed in the traditional campus spirit of shade tree groves and winding walkways.

1. Fess Street between Seventeenth Street and Eleventh Street with an eastward swing to Park Street from Cottage Grove south to the Union.
2. Walnut Grove from Seventeenth to Seventh and through the open athletic area into the Union area.
3. Fee Lane from the athletic fields south, under the railroad underpass and along a diagonal through the old stadium area past the gymnasium towards Ballantine Hall.
4. A major east-west bicycle avenue in the right-of-way of the proposal new east-west automobile route north of the railroad.
5. Along the east side of Jordan Street from the fraternity row south to Third Street.
6. Southwesterly from the dormitory area over the proposed new traffic route and the Illinois Central Railroad by way of an overpass. It continues westerly along the north side of Tenth to Fee Lane and the Tenth Street mall.
7. From the dormitory area north of the railroad along the east side of Union Street to the valley of the Jordan River.
8. From the proposed housing area north of the railroad and immediately west of the bypass, under the broadened railroad overpass and connecting with the Jordan River valley feeding into the Ballantine Hall area.
9. From the proposed housing area on the eastern campus extremity moving westerly toward the auditorium to merge with another bicycle routing immediately south of the auditorium.
10. From the same area of housing as described above but approximately 400 feet further south and moving directly into the Ballantine Hall and Union area. All major bicycle crossings of major campus streets to be controlled at peak traffic load by signal devices.
11. Most bicycle and walking patterns on the proposed circulation plan merge in the vicinity of the Union-Ballantine Hall and the auditorium. Special efforts to be made in this area to accommodate up to 3,000 bicycles, as well as to design for the easy separation of bicycles and pedestrians.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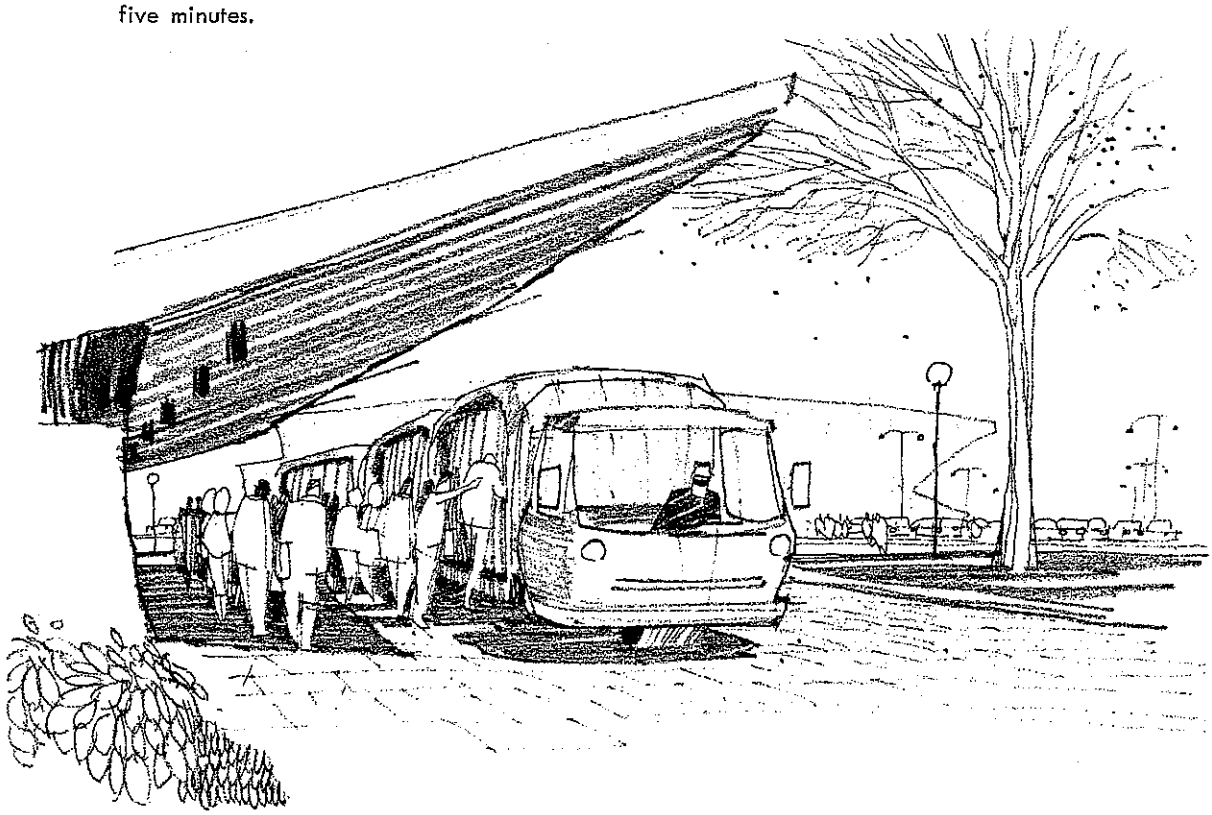
F. Shuttle Bus

1. To take advantage of the great amount of storage parking facilities in the vicinity of the new stadium and field house, a shuttle bus service should be investigated to provide direct north-south bus transportation on Woodlawn between Seventeenth and Seventh Streets. This service is to pick up riders at a point immediately north of Seventeenth in the parking zone and move south on Woodlawn to a drop-off point immediately north of Seventh. This bus would then return on the same route to repeat the operation. The duration of the trip would be approximately five minutes.



II. ESSENTIAL CONTINUING EFFORTS

A. Encourage a comprehensive community traffic flow study with special attention to quantifying the needs. The Indiana State Highway Commission has indicated that Bloomington can be identified as an urbanized area of 50,000 population or more, including the students of the University, qualifying the Bloomington metropolitan area for Federal aid in urban transportation planning as indicated in the Federal Aid Highway Act of 1962.

It is essential that the desires indicated in the attached plan be followed up by more precise origin and destination studies for the entire community so that major intersections can be adequately designed and the dimensions of shared university and community streets can be properly established.

B. Detailed designs and development studies of:
1. intersection control solutions
2. parking structures and their approaches
3. campus bicycles routes and their accommodation in parking areas
4. pedestrian walkways
5. future campus open space areas, visitor entrances and other special campus facilities as they relate to continuing academic and housing development.

C. To assure proper consideration of all aspects of a campus environment toward achieving quality in its future development, it is imperative that the University prepare itself with a GENERAL GUIDE FOR CONTINUING PHYSICAL DEVELOPMENT. This guide should be comprehensive in scope; further clarify automobile approaches and circulation, pedestrian and bicycle circulation, include general land use, conceptual building placement, and give special attention to maintaining and nurturing existing campus character values.

Further, it is necessary to adopt the principles of such a plan as policy and allow them to influence and determine decisions that will need to be made. The policy, as the plan, must be firm in overall conviction but flexible in detail to meet the ever-changine future with orderly and appropriate patterns of growth.